Claims

1. A recording medium comprising a graphics stream; wherein:

said graphics stream represents an interactive display to be overlayed with a motion picture made of a plurality of pictures, the interactive display including at least one graphical button material;

said graphics stream includes a plurality of pieces of graphics data that are grouped under state sets; and

the state sets respectively correspond to different states of the at least one button material and are disposed in a sequential order.

2. The recording medium of Claim 1, wherein:

the states are respectively a normal state, a selected state, and an active state; and

the state sets are respectively a normal-state set, a selected-state set, and an active-state set, and are disposed in an order of the normal-state set, the selected-state set, and the active-state set.

3. The recording medium of Claim 2, wherein:

the graphics stream further includes state control information used to control the states of the at least one button material, the state control information being disposed in front of the plurality of pieces of graphics data; and

when a button material to be in a selected state in

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an initial display of the interactive display by default is determined, graphics data constituting the selected state of the button material to be in a selected state in the initial display is disposed first in the selected-state set; and

5   the state control information includes specification information used to specify the button material to be in a selected state in the initial display.

4. The recording medium of Claim 2, wherein:

10   said graphics stream further includes state control information used to control the states of the at least one button material, the state control information being disposed in front of the plurality of pieces of graphics data; and

          when a button material to be in a selected state in

15   an initial display of the interactive display by default dynamically changes, the state sets are not provided in any particular order; and

          the state control information includes specification information used to indicate that the button material to be

20   in a selected state in the initial display by default dynamically changes.

5.   A reproduction apparatus for reproducing a video stream and a graphics stream, said reproduction apparatus

25   comprising:

          a video decoder operable to decode the video stream into a motion picture made of a plurality of pictures; and

          a graphics decoder operable to cause an interactive

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display to be displayed overlayed with the motion picture, the interactive display including at least one graphical button material;

wherein:

5   the graphics stream includes a plurality of pieces of graphics data that are grouped under state sets;

the state sets respectively correspond to different states of the at least one button material and are disposed in a sequential order; and

10   said graphics decoder uses graphics data respectively belonging to a top set and a second-place set in the state sets, for presenting the initial display of the interactive display, and uses graphics data belonging to remaining ones of the state sets for updating the interactive display upon

15   a user operation.

6.   The reproduction apparatus of Claim 5, wherein said graphics decoder includes:

a graphics processor operable to decode the plurality

20   of pieces of graphics data;

an object buffer operable to store a plurality of pieces of decompressed graphics data obtained by the decoding;

a graphics plane operable to store at least some of the pieces of the decompressed graphics data that are to be

25   overlayed with the motion picture; and

a control unit operable to:

enable the initial display of the interactive display to be presented by controlling to overlay, with the motion

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picture, decompressed graphics data respectively belonging to the top state set and the second-place state set which has been written to the graphics plane from said object buffer; and

5   enable the interactive display to be updated, by controlling to overlay, with the motion picture, decompressed graphics data belonging to the remaining ones of the state sets which has been written to the graphics plane from said object buffer.

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7. The reproduction apparatus of Claim 6, wherein:

the states are respectively a normal state, a selected state, and an active state; and

the state sets are respectively a normal-state set,
15   a selected-state set, and an active-state set, and are disposed in an order of the normal-state set, the selected-state set, and the active-state set;

the graphics stream further includes state control information used to control the states of the at least one
20   button material; and

when the state control information includes description specifying a button material to be in a selected state in the initial display by default, the graphics decoder performs the initial display using (a) graphics data in the
25   selected-state set corresponding to the button material to be in a selected state in the initial display, and (b) graphics data in the normal-state set corresponding to any other button material than the button material to be in a selected state

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in the initial display.

8. The reproduction apparatus of Claim 7, wherein said control unit, upon completion of decoding of the

5   first graphics data of the selected-state set, performs (i) clearing of the graphics plane, and (ii) reading from said object buffer, and writing to the cleared graphics plane (a) the graphics data in the selected-state set corresponding to the button material to be in a selected state in the initially

10   display, and (b) the graphics data in the normal-state set corresponding to any other button material than the button material to be in a selected state in the initial display.

9.   A recording method for recording to a recording

15   medium, said method comprising:

creating application data; and

recording the created data to the recording medium; wherein:

the application data includes a graphics stream;

20   the graphics stream represents an interactive display to be overlayed with a motion picture made of a plurality of pictures, the interactive display including at least one graphical button material;

the graphics stream includes a plurality of pieces of

25   graphics data that are grouped under state sets; and

the state sets respectively correspond to different states of the at least one button material and are disposed in a sequential order.

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10. A program for enabling a computer to reproduce a video stream and a graphics stream, said program comprising code operable to cause the computer to perform:

5   a decoding the video stream into a motion picture made of a plurality of pictures; and

a display of an interactive display to be overlayed with the motion picture, the interactive display including at least one graphical button material;

10   wherein:

the graphics stream includes a plurality of pieces of graphics data that are grouped under state sets;

the state sets respectively correspond to different states of the at least one button material and are disposed

15   in a sequential order; and

in said display, graphics data respectively belonging to a top set and a second-place set in the state sets is used for presenting an initial display of the interactive display, and graphics data belonging to remaining ones of the state

20   sets is used for updating the interactive display upon a user operation.

11. A method of reproducing a video stream and a graphics stream, said reproduction method comprising:

25   decoding the video stream into a motion picture made of a plurality of pictures; and

displaying an interactive display to be overlayed with the motion picture, the interactive display including at least

one graphical button material;

wherein:

the graphics stream includes a plurality of pieces of graphics data that are grouped under state sets;

5   the state sets respectively correspond to different states of the at least one button material and are disposed in a sequential order; and

in said displaying, graphics data respectively belonging to a top set and a second-place set in the state
10   sets is used for presenting an initial display of the interactive display, and graphics data belonging to remaining ones of the state sets is used for updating the interactive display upon a user operation.